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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,091	11/16/2001	Kelvin Kar-Kin Au	7000-107	9121
27820	7590	01/12/2006	EXAMINER	
WITHROW & TERRANOVA, P.L.L.C.			GAUTHIER, GERALD	
P.O. BOX 1287			ART UNIT	PAPER NUMBER
CARY, NC 27512			2645	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/050,091

Applicant(s)

KAR-KIN AU ET AL.

Examiner

Gerald Gauthier

Art Unit

2645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-33 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claim(s) 1-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US 6,865,185 B1) in view of Molloy et al. (US 6,591,382 B1).

Regarding **claim(s) 1, 12 and 23**, Patel discloses an access point for scheduling delivery of units of data to a plurality of access terminals (FIG. 1 and column 1, lines 21-24) comprising:

c) a control system (34 on FIG. 2) having a plurality of queues corresponding to the plurality of access terminals (FIG. 2 and column 9, lines 26-40) and adapted to:

i) store the data received over the communication network as units in the plurality of queues for the plurality of access terminals (FIG. 2 and column 9, lines 26-40) [The dynamic bandwidth estimator 34 stores the packets in a queue to allow the virtual groups 36 to control its own congestion];

ii) determine a temporal fading factor based on a current channel condition relative to an average channel condition for each of the plurality of access terminals (FIG. 2 and column 9, lines 26-40) [The dynamic bandwidth estimator 34 assesses the affected virtual group 36 based on notification of dynamic regrouping of flows to enable the interface impact and the congestion parameters for the group];

iii) determine a throughput fairness factor based on throughput capability for each of the plurality of access terminals (FIG. 2 and column 10, lines 26-42) [The packets data 60 are serviced in an order in which they arrive in order to maintain fairness among the group 36 based where sufficient bandwidth is available];

iv) determine a delay Quality of Service factor based on delivery times associated with at least one unit for each of the plurality of access terminals (FIG. 11 and column 16, lines 1-8);

v) calculate a weighting factor based on the temporal fading factor, the throughput fairness factor, and the delay QoS factor for each of the plurality of access terminals (FIG. 11 and column 16, lines 39-61); and

vi) select a unit for transmission via the wireless interface from one of the plurality of queues based on the weighting factor (FIG. 12 and column 17, lines 1-13).

Patel fails to disclose a network interface and a wireless interface.

However, Molloy teaches a network interface for receiving data from a communication network (17 on FIG. 2); and

b) a wireless interface for transmitting units of the data to a plurality of access terminals (18 on FIG. 2).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Patel using the teaching of interfaces and protocol stack as taught by Molloy.

This modification of the invention enables the system to have a network interface and a wireless interface so that the system would correct the quality of service.

Regarding **claim(s) 2, 13 and 24**, Patel discloses the control system is further adapted to:

a) determine the average channel condition over a period (column 16, lines 44-61);

b) determine the current channel condition (column 16, lines 44-61); and

c) calculate a ratio of the current channel condition to the average channel condition to determine the temporal fading factor (column 16, lines 44-61).

Regarding **claim(s) 3, 14 and 25**, Patel discloses the current and average channel conditions are derived from carrier-to-interference ratios (FIG. 1 and column 6, lines 12-22).

Regarding **claim(s) 4, 15 and 26**, Patel discloses the throughput fairness factor is calculated in a manner deemed to achieve a select level of fairness between access terminals having better channel conditions and access terminals having worse channel conditions (FIG. 12 and column 10, lines 26-42).

Regarding **claim(s) 5, 16 and 27**, Patel discloses the throughput fairness factor is a function of the average channel condition (FIG. 12 and column 10, lines 26-42).

Regarding **claim(s) 6, 17 and 28**, Patel discloses the throughput fairness factor is a function of an average throughput rate (FIG. 12 and column 10, lines 54-66).

Regarding **claim(s) 7, 18 and 29**, Patel discloses the throughput fairness factor is a further function of the average channel condition (FIG. 12 and column 10, lines 54-66).

Regarding **claim(s) 8, 19 and 30**, Patel discloses the delay QoS factor for each access terminal is a function of the deliver times for a plurality of the units in each queue including the next unit to transmit in each queue (FIG. 11 and column 16, lines 44-61).

Regarding **claim(s) 9, 20 and 31**, Patel discloses the delay QoS factor for each access terminal is a function of an amount of data to be transmitted (FIG. 11 and column 16, lines 44-64).

Regarding **claim(s) 10, 21 and 32**, Patel discloses the control system is further adapted to:

- a) calculate a weight inversely proportional to the delivery time for a plurality of the units in each of the plurality of queues (FIG. 11 and column 16, lines 44-64); and
- b) calculate the delay QoS factors for each access terminal by summing the weights for the plurality of units in each of the plurality of queues (FIG. 11 and column 16, lines 44-64).

Regarding **claim(s) 11, 22 and 33**, Patel discloses the control system is further configured to assign a defined weight for units having a delivery time greater than a defined threshold (FIG. 12 and column 17, lines 1-13).

***Response to Arguments***

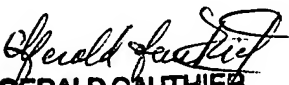
5. Applicant's arguments with respect to **claim(s) 1-33** have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gerald Gauthier whose telephone number is (571) 272-7539. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**GERALD GAUTHIER**  
**PATENT EXAMINER**

Gerald Gauthier  
Examiner  
Art Unit 2645

g.g.  
January 9, 2006